



PATENT APPLICATION  
Serial No. 09/462,224  
Atty. Docket No. 3691-991961

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit 3617

In re Application of

MARCEL H.A. JANSSENS

Serial No. 09/462,224

Filed January 3, 2000

Examiner - Frantz F. Jules

RAIL TRACK HAVING ENHANCED  
ABSORPTION OF  
VIBRATION AND SOUND

RECEIVED

JAN 29 2003

GROUP 3600

DECLARATION TRAVERSING REJECTIONS UNDER 37 C.F.R. §1.132

Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

I, Marcel Henk Andre Janssens am the sole inventor of the above-identified patent application and I declare as follows:

1. I was awarded my Master's Degree in 1991 from Eindhoven Technical University.

2. Since May 1, 1991, I have worked for the Netherlands Organisation for Applied Scientific Research as a project engineer.

3. I have extensive experience in acoustics and especially structural acoustics, as evidenced by numerous papers I have written which have been published or are planned to be published in scientific journals including:

a) M.H.A. Janssens, D.J. Thompson, "A calculation model for noise from steel railway bridges." Journal of Sound and Vibration 193 (1), 1996, pp. 295-305. (First

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presented at Fifth International Workshop on Railway and Tracked Transit System Noise, Voss, Norway, June, 1995.

b) M.H.A. Janssens, D.J. Thompson, J.W. Verheij, "The Use of an Equivalent Forces Method for the Experimental Quantification of Structural Sound Transmission in Ships," *Journal of Sound and Vibration* 226, pp. 305-328, 1999.

c) M.G. Dittich, M.H.A. Janssens, "Improved Measurement Methods for Railway Rolling Noise," *Journal of Sound and Vibration*, Vol. 231, No. 3, March, 2000, pp. 595-609.

d) M.H.A. Janssens, J.W. Verheij, "A Pseudo-Forces Methodology to be Used in Characterization of Structure-Borne Sound Sources," accepted for *Applied Acoustics*, 2000.

e) M.H.A. Janssens, J.W. Verheij, T. Loyau, "Experimental Example of the Pseudo-Forces Method Used in Characterisation of a Structure-Borne Sound Source," submitted to *Applied Acoustics*, 2000; and

f) Over 20 conference publications in the field of Acoustics and Structural Acoustics.

4. I have studied the United States Patent Number 4,775,103 titled "Elastically Mounted Rails for Vehicle Tracks" by Ortwein, hereinafter the Ortwein patent. The Ortwein patent in Figures 2 discloses a system with a rail 11 supported in the vertical direction by both layer 17 and layer 15. Layer 15 follows the curved profile of the rail such that a portion of the vertical load will be taken by the angled portion of the steel frame. The stiffness in the horizontal direction is much less, not greater, than the stiffness in the vertical direction. This is true, first of all, because the steel frame surrounding the layers 15, 17 will flex outwardly as the rail 11 moves downward. Second of all the layer 15, because it angles along the side of the rail 11, provides a greater thickness of resilient material in the horizontal direction to resist horizontal forces. This greater thickness provides a lower stiffness. Finally, the stiffness in the horizontal direction will be lower because the constraining plates 6, which are only clamped at one side, provide a relatively resilient structure. Further, the horizontal stiffness is limited by the

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stiffness of the bolt 9. Nothing in Figure 2 of the Ortwein patent suggests the stiffness in the horizontal direction is greater than the stiffness in the vertical direction. Figure 3 of the Ortwein patent shows a rail 21 embedded in a concrete frame-forming member 26. In this arrangement, the relation of vertical to horizontal stiffness is not clear. However, even if there may be a higher stiffness in the horizontal direction, this is caused primarily by the lowering of the vertical stiffness due to the cavity under the rail foot. On the other hand, in my invention, the channel-like recess fully supports the rail. As stated in claim 8, the entire length of the first layer contacts both the recess bottom and the bearing surface. Further, in my invention as found in claim 8, the elastic layers are always adjacent to the rail head, whereas Ortwein's Figure 3 presents established elements 22 used as filling members adjacent to the rail head. These elements enlarge the free sound radiating surface and, therefore, increase sound, which is contrary to the object of my invention as stated on page 2 lines 25-31 of the my patent application.

5. I have studied European Patent Application Publication No. EP 0 771 908 A1 titled "Rail Construction, Particularly For Bridge or Viaduct" by Tuinenburg, hereafter the Tuinenburg application. The Tuinenburg application teaches a rail 10 embedded in a material called Corkelast 11, which is a sound absorbing material. This is particularly useful for rails passing over a steel bridge or viaduct, since otherwise these structures would greatly amplify sound produced by the rail vibrations. Furthermore, the rail 11 rests upon a plate 14 of sound absorbing material. The stiffness of these materials does not even seem to be a consideration in this design disclosed in this patent.

6. I have studied German Patent 916,830 by Fassbinder assigned to Dortmunder Union, hereinafter the Dortmunder Union patent. The Dortmunder Union patent, in Figures 1, shows a rail "b" embedded in a resilient material "c" and positioned within a rigid base

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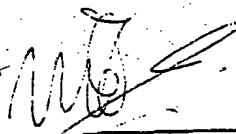
"a". Clearly the stiffness in the horizontal direction is less than the stiffness in the vertical direction. Figure 2 shows a rail "b1" embedded in a resilient material "c" and positioned within a rigid base "d". In neither of these figures is there shown an arrangement where the stiffness in the horizontal direction is greater than the stiffness in the vertical direction. If anything, these figures suggest the opposite, wherein the stiffness in the horizontal direction is less than the stiffness in the vertical direction.

7. In the present Office Action, the Examiner indicated that claims 8-12 and 14 of the United States patent application are anticipated in view of the teaching of the Ortwein patent and furthermore claims 8-12 and 14 are made obvious by the teaching of the Tuinenburg patent application in view of the teaching of the Dormunder Union patent. I disagree for the reasons just discussed. Furthermore, I do not believe these claims are made obvious by the teaching of the Ortwein patent.

8. I declare further that all statements made herein of my own knowledge are true and that, to the best of my knowledge, all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

I hereby subscribe my name to the foregoing Declaration this 24<sup>th</sup> day of

January, ~~2002~~ 2003



Marcel Henk Andre Janssens

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